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# AERIAL PHOTOGRAPHIC ANALYSIS OF CHEMICAL PROCESSORS, INC.

## Seattle, Washington

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Burlington Environmental Pier 91

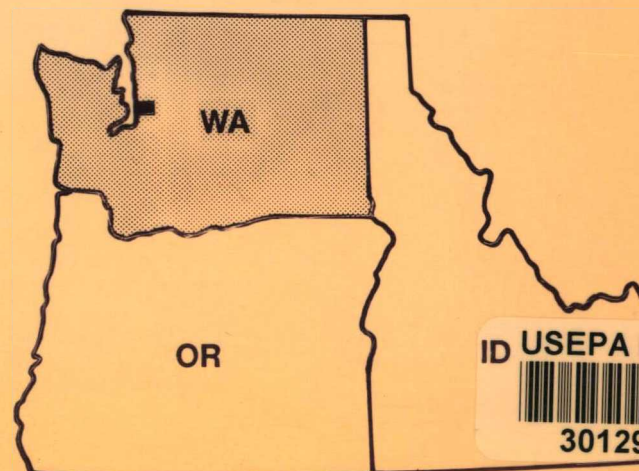
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AERIAL PHOTOGRAPHIC ANALYSIS OF CHEMICAL PROCESSORS, INC.

Seattle, Washington

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# NOTICE

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## ABSTRACT

This report presents a limited historical analysis of the Chemical Processors, Inc., site located at the north end of Elliott Bay, on Pier 91, Seattle, Washington. The report utilized photography acquired in 1963, 1977, and 1985 as the primary data source for the information provided.

In 1963, the Chemical Processors, Incorporated site had 29 vertical storage tanks of various sizes, all dedicated to oily water and waste coolant storage. Of the 29 tanks, all but 6 small tanks were adequately contained with concrete walls. The remainder of the facilities included a main warehouse, an oily water separator building, and a waste water treatment building. The remainder of the 22-acre survey area was probably leased to City Ice Corporation. At this time the site was extremely clean with no spills or sludge deposits visible. Housekeeping practices severely deteriorated by 1977. Stains were visible in the storage tank yards, solid waste was piled on site, and two waste storage yards had been constructed. One storage area contained all solid waste (probably sludge) and the other contained mostly scrap. Housekeeping practices improved by 1985. Both storage sites had been removed and the area paved. The waste water treatment building on-site had been removed and no solid waste was visible. The site was again clean, except for a ground stain in the vicinity of the dismantled waste water treatment building.

The Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, prepared this report for the Agency's Environmental Services Division in Region 10 at Seattle, Washington and the Office of Solid Waste in Washington, D.C.



## CONTENTS

	<u>Page</u>
Abstract . . . . .	iii
Introduction . . . . .	1
Methodology . . . . .	2
Analysis Summary . . . . .	5
Photo Analysis . . . . .	6

## FIGURES

<u>Number</u>		
1	Study area location map, Washington . . . . .	vi
2	Local study area location map, Seattle North, Washington . . . . .	4
3	Chemical Processors, Inc., WA, June 10, 1963 . . . . .	7
4	Chemical Processors, Inc., WA, April 22, 1977 . . . . .	9
5	Chemical Processors, Inc., WA, March 3, 1985 . . . . .	11

## TABLE

1	Documentation of Aerial Photography . . . . .	3
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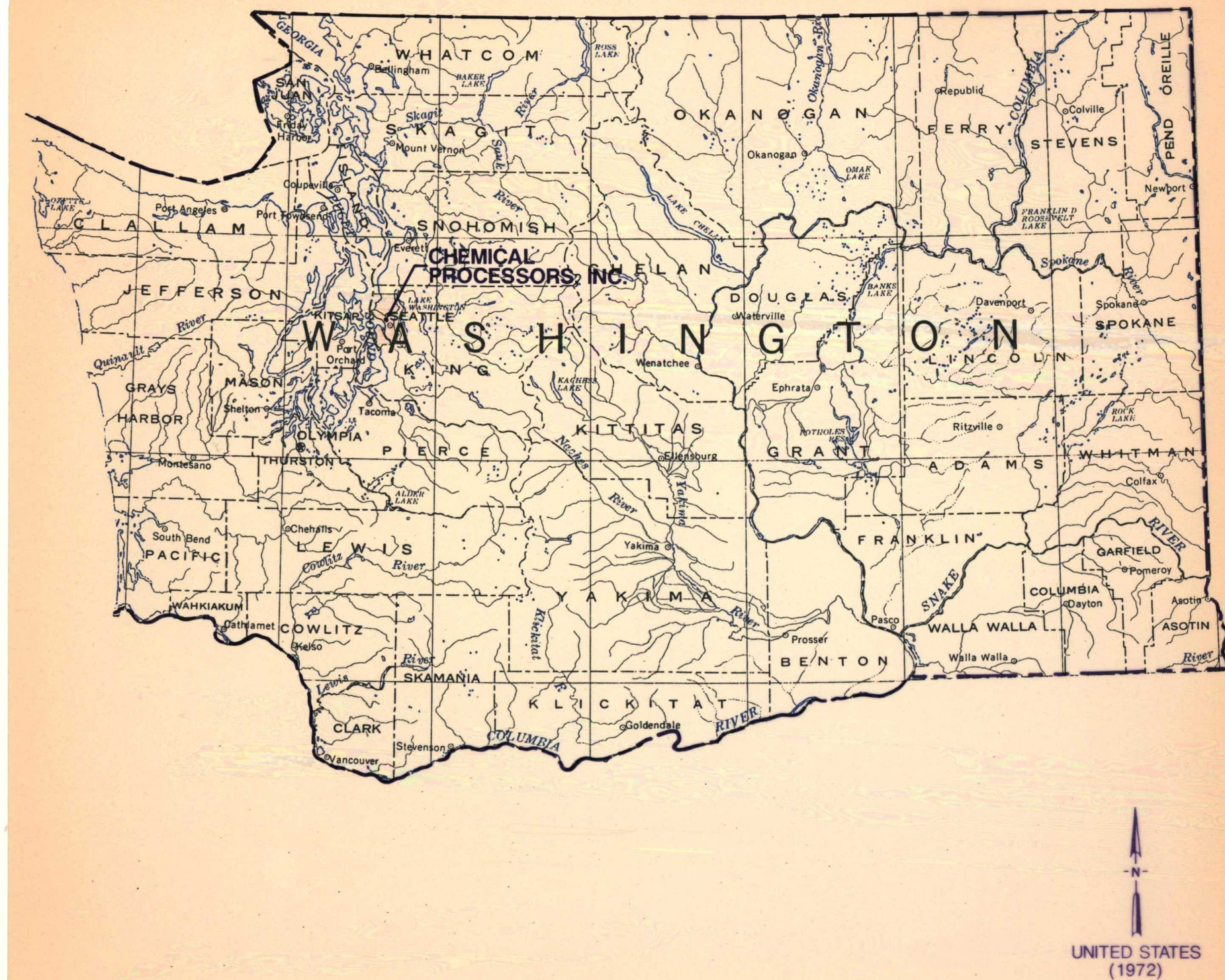


Figure 1. Study area location map, Washington. Scale 1:2,500,000.



## INTRODUCTION

This report presents a historical analysis of the Chemical Processors, Inc. site located at the north end of Elliott Bay, on Pier 91 in Seattle, Washington (Figure 1). The focus of the report was on the sources and disposition of sludge deposits in 1963, 1977, and 1985.

The Environmental Protection Agency's Environmental Monitoring Systems Laboratory in Las Vegas, Nevada, prepared this report for the Agency's Environmental Services Division in Region 10 at Seattle, Washington and the Office of Solid Waste in Washington, D.C.



## METHODOLOGY

Stereoscopic pairs of historical aerial photographs were used to perform the analysis. Stereo viewing enhances the interpretation because it allows the analyst to observe the vertical as well as horizontal spatial relationships of natural and cultural features. Stereoscopy is also an aid in distinguishing between various shapes, tones, textures, and colors that can be found within the study area.

Evidence of waste burial is a prime consideration when conducting a hazardous waste site analysis. Leachate or seepage resulting from burial and dumping of hazardous materials might threaten existing surface or ground-water resources. Pools of unexplained liquid are routinely noted because they can indicate seepage from buried wastes and may enter drainage channels that allow contaminants to move off the site. An excellent indicator of how well hazardous materials are being handled at a site is the presence or absence of spills, spill stains, and vegetation damage. Trees and other forms of vegetation that exhibit a marked color difference from surrounding members of the same species are labeled "stressed", "damaged," or "dead" based upon the degree of noticeable variation. Vegetation is so labeled only after consideration of the season in which the photography was acquired.

Drainage analysis identifies the direction a spill or surface runoff would follow. Direction of drainage is determined from analysis of the photographs and from U.S. Geological Survey topographic maps. Whenever they are available, 7.5-minute quadrangle maps (scale 1:24,000) are used to show site location and to provide geographic and topographic information. The site boundaries as depicted on maps and photos within the report were selected by the analyst, and are not intended to be used as legal boundaries.

The U.S. Environmental Protection Agency's Statement of Procedures on Floodplain Management and Wetlands Protection (Executive Orders 11988 and 11990, respectively) requires EPA to determine if removal or remedial actions at hazardous waste sites will affect wetlands or flood plains and to avoid or minimize adverse impacts on those areas. To aid in compliance with these orders, significant wetland areas

located within and adjacent to the site have been identified when present. However, these sites have not been visited to verify the accuracy of wetland identification.

Results of the analysis are shown on annotated overlays attached to the photos. The following table provides documentation of the photographs used in this report:

TABLE 1. DOCUMENTATION OF AERIAL PHOTOGRAPHY

Site name, location, geographic coordinates.	Figures	Date of acquisition	Original scale	Film type*	Photo source†	Photo I.D.	Frames
Chemical Processors, Inc., Seattle, Washington	3 4 5	06-10-63 04-22-77 03-03-85	1:20,000 1:18,000 1:18,000	B&W B&W B&W	NOS WALK WALK	W KC77-4N SKP85-11	6124 14 11
47°38'03"N 122°22'53"W							

\*Film type identification:  
B&W: Black-and-white

†Photo source identification:

NOS: Support Section, N/CG236, Nautical Charting Division, National Ocean Service, NOAA, SSMC #3, Room 5212, 1315 East-West HWY, Silver Spring, Maryland 20910

WALK: Walker & Associates, Inc., 12652 Interurban Ave., South Seattle, WA 98168





Figure 2. Local study area location map, Seattle North, Washington.  
Scale 1:25,000.



## ANALYSIS SUMMARY

The Chemical Processors, Inc. site is located on the Port of Seattle's Terminal 91 at the north end of Elliott Bay, along West Garfield street, just west of 15th Avenue (Figure 2). The actual site occupies approximately 4 acres within a requested "survey area" of approximately 22 acres. The site is located on an interbay between the Queen Anne and Magnolia residential neighborhoods. Surface runoff and leakage/spillage from the site would be contained on site. According to literature furnished by EPA Region 10, surface runoff is treated and dumped into the Metro sewer system and spillage/rainwater from the tank yards is pumped into the regular recycling system. There were no wetlands in the area and no vegetation damage was noted during the survey period. Since the site is located on a bay and the surrounding area is residential serviced by storm sewers, it is unlikely to be threatened by flooding.

In 1963, the Chemical Processors, Incorporated site had 29 vertical storage tanks of various sizes, all dedicated to oily water and waste coolant storage. Of the 29 tanks, all but 6 small tanks were adequately contained with concrete walls. The remainder of the facilities included a main warehouse, an oily water separator building, and a waste water treatment building. The remainder of the 22-acre survey area was probably leased to City Ice Corporation. At this time the site was extremely clean with no spills or sludge deposits visible. Housekeeping practices severely deteriorated by 1977. Stains were visible in the storage tank yards, solid waste was piled on site, and two waste storage yards had been constructed. One storage area contained all solid waste (probably sludge) and the other contained mostly scrap. Housekeeping practices improved by 1985. Both storage sites had been removed and the area paved. The waste water treatment building on-site had been removed and no solid waste was visible. The site was again clean, except for a ground stain in the vicinity of the dismantled waste water treatment building.

## PHOTO ANALYSIS

JUNE 10, 1963 (FIGURE 3)

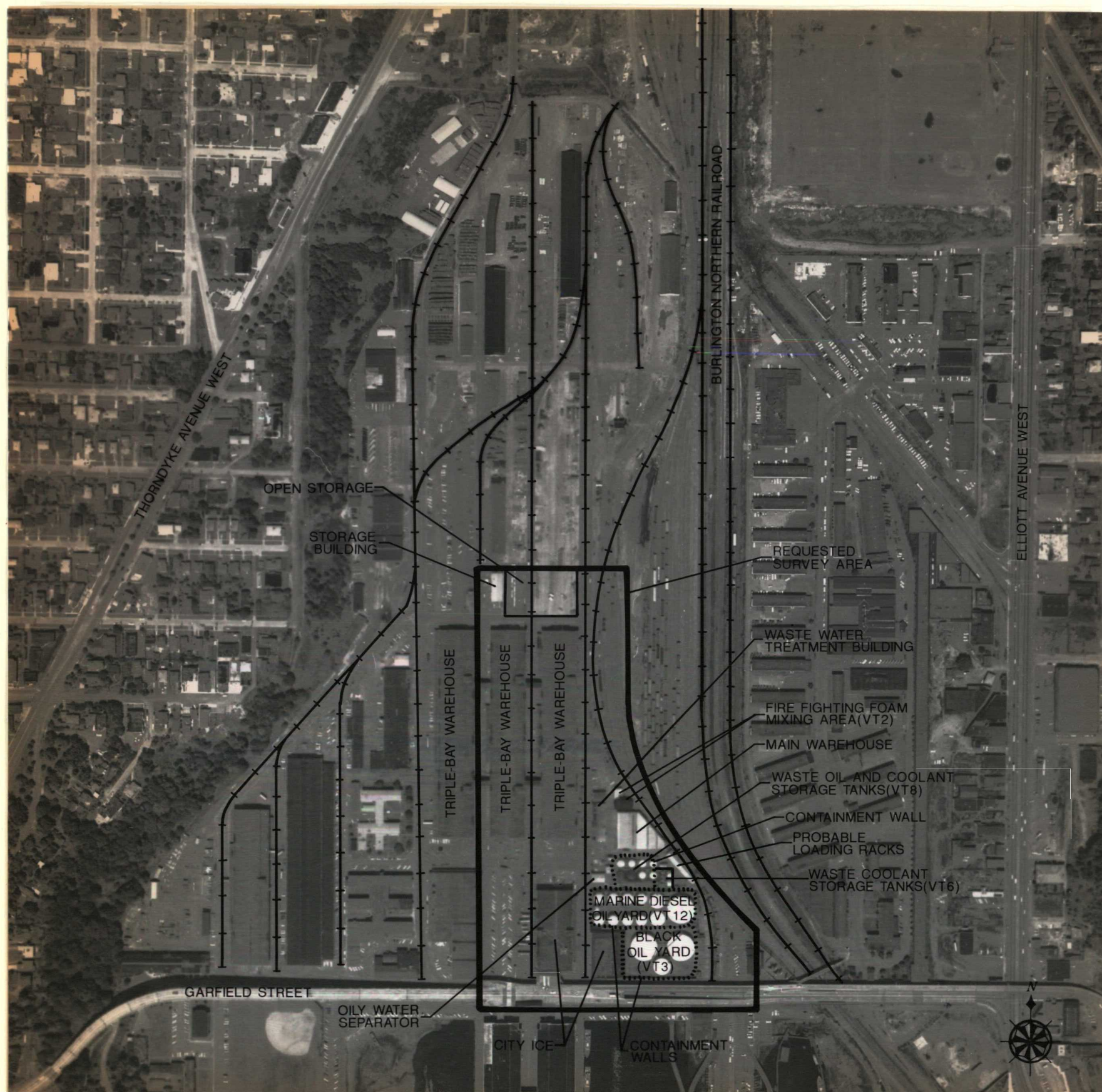
This overflight revealed the following status of the Chemical Processors, Inc. site. There was a total of 29 vertical storage/processing tanks dedicated to oily water and coolant recycling. These tanks were grouped in four sections: the Black Oil Yard containing two large and one medium tank, the Marine Diesel Oil Yard containing one large, two medium, and nine small vertical tanks, the Small Yard containing eight small vertical tanks, and a small waste coolant storage area containing six small tanks. The Black Oil and Marine Diesel Oil Yards were contained with 15-17 foot concrete walls and the Small Yard was contained with 5 foot concrete walls. The coolant storage tanks were uncontained. Two more vertical tanks were located on the north end of the facility, dedicated to fire fighting foam mixing. Other facilities consisted of an oily water separator building, a waste water treatment building (probably still under construction/modification), a shed-type building probably dedicated to on/off rail loading racks, and a main warehouse building also housing the main office. The remainder of the requested survey area contained two small, City Ice Corporation warehouses, portions of a huge, triple-bay warehouse and a small portion of open storage probably also belonging to City Ice. The entire requested survey area was clean and excellently maintained. No spillage or waste storage was visible at the time of this overflight.



APRIL 22, 1977 (FIGURE 4)

The 1977 photography revealed several changes in the survey area. Mainly, the introduction of solid waste (probably sludge) to a previously "clean" plant. There were stains noted in the Black Oil and Marine Diesel Oil yards. The small shed-type building covering the probable rail on/off loading racks, next to the main warehouse, was being dismantled. Between this building and the waste coolant storage tanks was a small solid waste pile. There were also solid waste piles (probably sludge) against the north end of the waste water treatment building. A crane was operating in this area, probably transferring this solid waste into the fenced yard to the west. The large, triple-bay warehouse north of the City Ice building and a portion of the open storage area north of that warehouse had been removed and two open storage waste yards had been created. These yards were serviced by three rail spurs. The fenced yard on the east had solid waste stacked along both sides and appeared to have a shallow covering of probable waste over the entire area. The yard had vehicle accesses on both north and south ends, plus a vehicle access adjacent to the waste water treatment building. A scraper was entering the south access and a front loader was operating in the yard at the time of this overflight. The partially fenced yard, across the rail spur to the west, contained solid waste stacked against the north perimeter fence. This solid waste did not appear to be of the same consistency as that in the other yard. The remainder of this yard contained scrap.





## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- x—x—x FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- x x x x x FENCE
- — — STUDY AREA

### DRAINAGE

- — — DRAINAGE
- FLOW DIRECTION
- — — INDETERMINATE DRAINAGE

### TRANSPORTATION/UTILITY

- ==== VEHICLE ACCESS
- + + + + RAILWAY

### SITE FEATURES

- ||||| DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- ⊖ EXCAVATION, PIT (EXTENSIVE)
- ⊖ MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

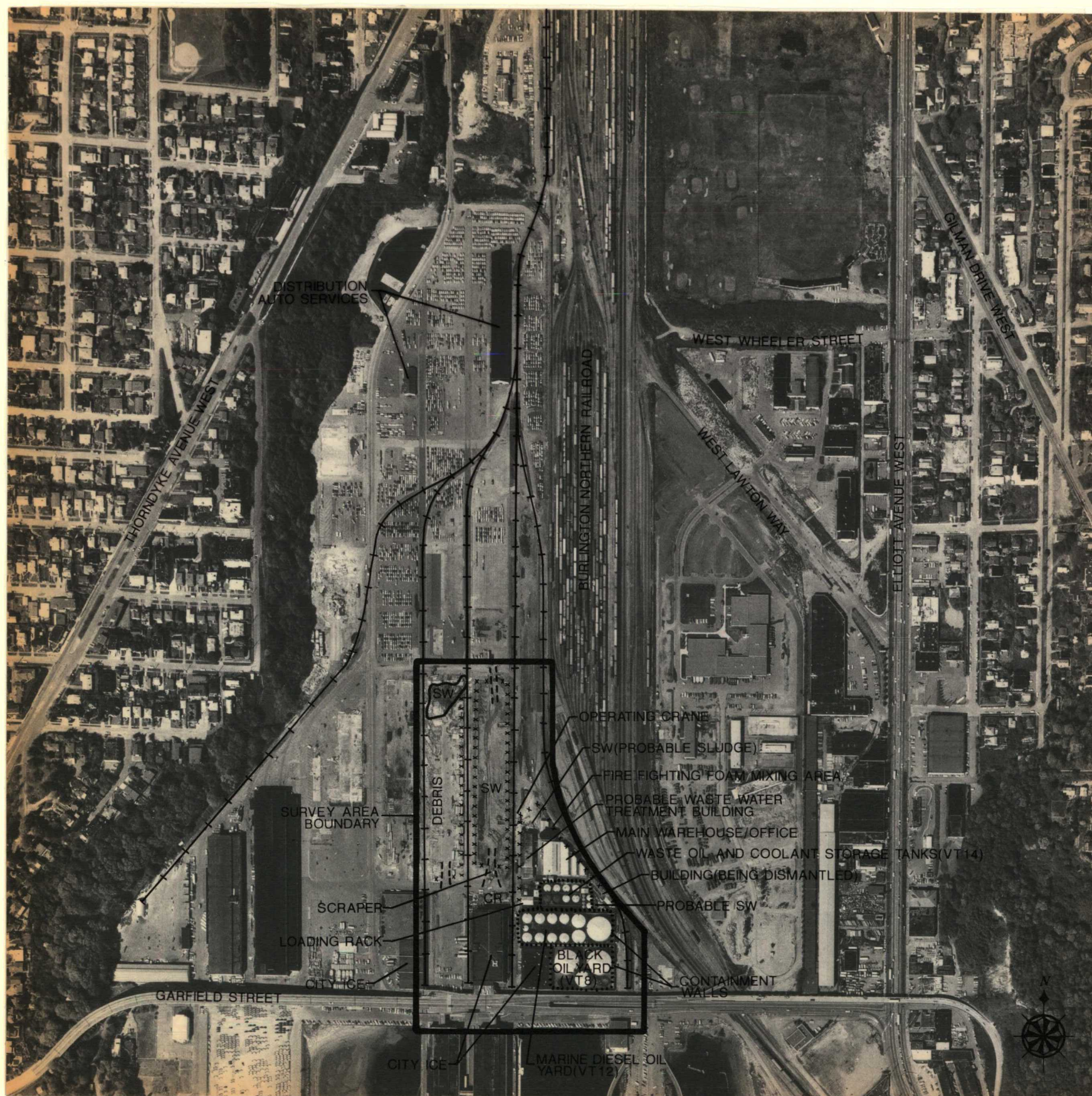
Figure 3. Chemical Processors, Inc., WA., June 10, 1963. Approximate scale 1:4,985.



MARCH 3, 1985 (FIGURE 5)

Dismantling and removal of the small warehouse in the northeast corner of the site had been completed. Also, the waste water treatment building in the northwest corner of the plant had been dismantled and removed. There was a dark stain originating in the vicinity of the foundation of the removed building and extending northward to the Distribution Auto Services parking lot. The fenced yard and the partially fenced yard containing solid waste material in 1977 (Figure 4) had both been removed, paved, and converted to parking space for Distribution Auto Services. Distribution Auto Services had built a new auto processing building just south of the old building. The rail spurs servicing the Chemical Processors, Inc. site on the west appeared to have been removed as had the spurs to the remainder of Pier 91. With the exception of the on-site ground stain, housekeeping practices again appeared good. No other significant changes were noted in the Pier 91 area.





## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- x-x-x-x FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- x x x x x FENCE
- - - - STUDY AREA

### DRAINAGE

- - - - DRAINAGE
- FLOW DIRECTION
- - - - INDETERMINATE DRAINAGE

### TRANSPORTATION/UTILITY

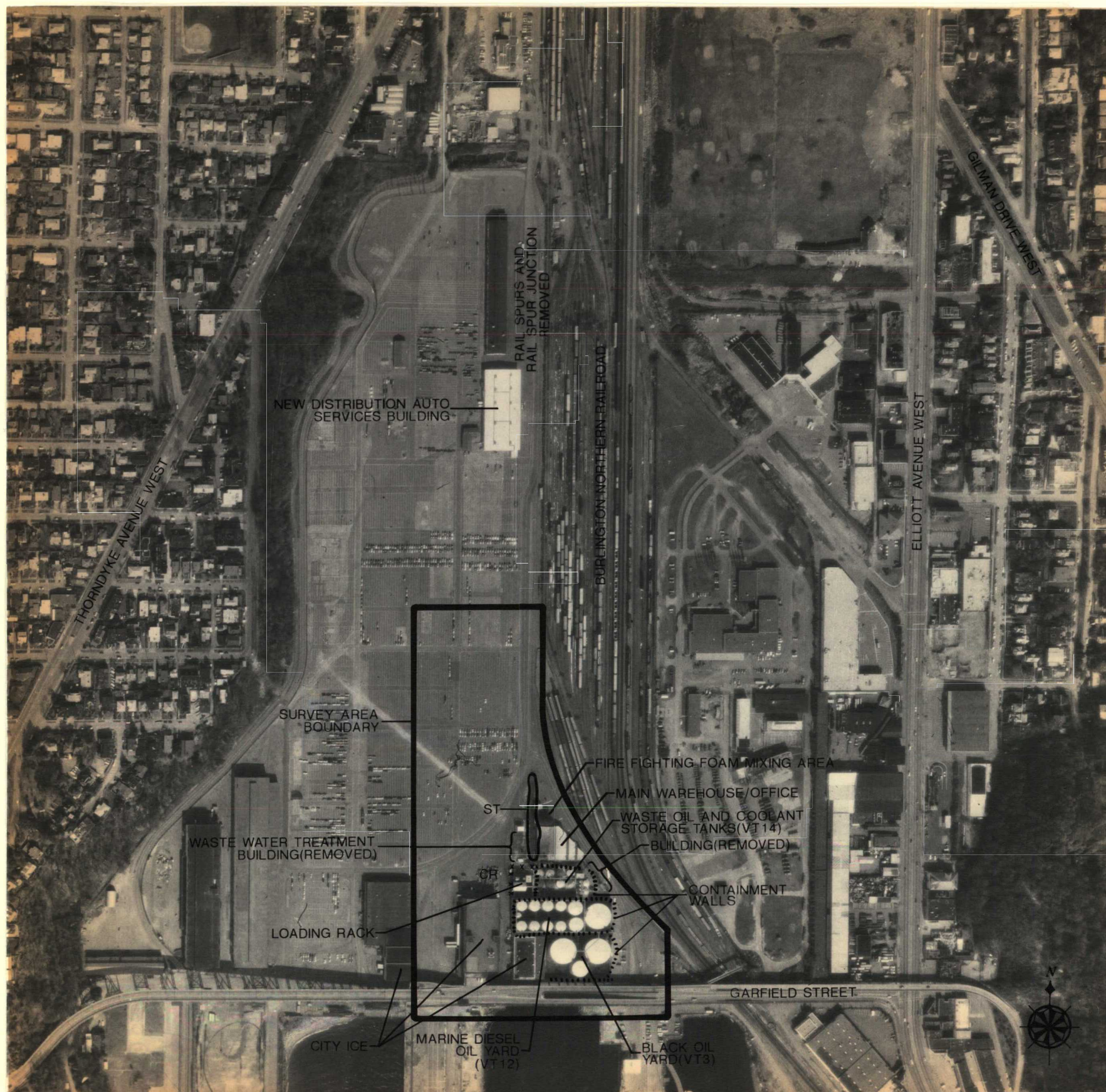
- ===== VEHICLE ACCESS
- + + + + RAILWAY

### SITE FEATURES

- ||||| DIKE
- SL STANDING LIQUID
- SL STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
- PT PRESSURE TANK
- VT VERTICAL TANK
- CA CLEARED AREA
- DG DISTURBED GROUND
- FL FILL
- IM IMPOUNDMENT
- LG LAGOON
- OF OUTFALL
- SD SLUDGE
- ST STAIN
- SW SOLID WASTE
- TR TRENCH
- VS VEGETATION STRESS
- WD WASTE DISPOSAL AREA
- WL WETLAND

Figure 4. Chemical Processors, Inc., WA., April 22, 1977. Approximate scale 1:5,673.





## INTERPRETATION CODE

### BOUNDARIES AND LIMITS

- x-x-x-x FENCED SITE BOUNDARY
- UNFENCED SITE BOUNDARY
- x x x x x x FENCE
- STUDY AREA

### DRAINAGE

- DRAINAGE
- FLOW DIRECTION
- - - - INDETERMINATE DRAINAGE

### TRANSPORTATION/UTILITY

- ===== VEHICLE ACCESS
- + + + + RAILWAY

### SITE FEATURES

- ||||| DIKE
- SL STANDING LIQUID
- EXCAVATION, PIT (EXTENSIVE)
- MOUNDED MATERIAL (EXTENSIVE)
- MM MOUNDED MATERIAL (SMALL)
- CR CRATES/BOXES
- DR DRUMS
- HT HORIZONTAL TANK
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- WL WETLAND

Figure 5. Chemical Processors, Inc., WA., March 3, 1985. Approximate scale 1:5,387.